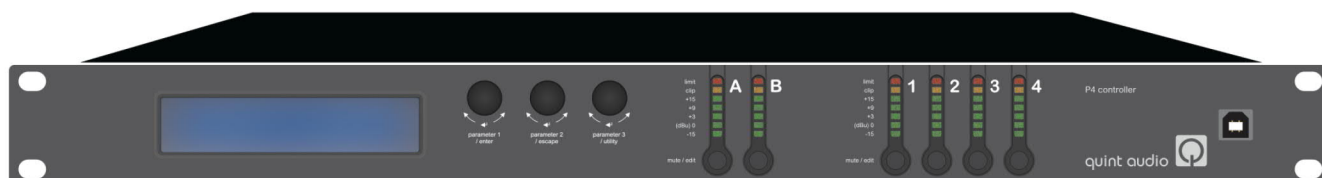# P4 manual
DSP Operating Instructions

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Thank you for purchasing the Quint Audio P4 controller

This manual contains essential information on installing and operating the product correctly and safely. It is necessary to read this manual carefully in order to become familiar with these procedures.

Keep the manual for future use. This manual forms an integral part of the product. Reselling of the product is only possible if the user manual is available. Any changes made to the product must be documented in writing and passed on to the buyer in the event of resale.

As part of a continuous evolution of techniques and standards, Quint Audio BV reserves the right to change the specifications of the product and the content of this manual without prior notice. Please check the Quint Audio BV web site at www.quintaudio.com on a regular basis for any updates.

Should the product require repair or should information about the warranty be needed, please contact an approved Quint Audio BV distributor. The address of the nearest distributor is available on the Quint Audio BV web site.

Best regards,

The Quint Audio people

Unpacking
Carefully open the shipping carton and check the product for any noticeable damage.

Each Quint Audio BV product is tested and inspected before leaving the factory and should arrive in perfect condition. If found to be damaged, notify the shipping company or the distributor immediately.

Only the consignee may initiate a claim with the carrier for damage incurred during shipping. Be sure to save the carton and packing materials for the carrier's inspection.

Safety Warnings in this manual

This refers to potentially dangerous situations or dangerous forces that may lead to personal injury.

This refers to a potentially dangerous situation which may lead to damage to the equipment.

This refers to a situation which may cause the equipment to malfunction.

Read this manual carefully before using the product.
• Read all safety instructions, warnings and instructions concerning this product.
• Make sure you fully understand the safety issues mentioned.
• Read all cautions present on the product itself.
• Read all the related product information before using the system.
• Work with qualified personnel only.
• Installing,and using electronic equipment is never free of potential hazards. You cannot rule out human error while gravity, wind and electrical forces do their regular job. Therefore: Always use yourcommon sense!

Personal safety
Ensure health and safety during installation and setup. In order to prevent accidents when deploying professioal power amplifiers, please take note of the following:

• The system should only be installed or fitted in accordance with the manufacturers recommendations. The amplifier may not be used for other purposes than it is meant for.

• All system components must be inspected before use, in order to detect any possible defects.

• Do not place the product on an unstable cart, stand, tripod, bracket, or table. The product may fall and be seriously damaged and may cause serious human injury.

• Loudspeakers and amplifiers work with potentially harmful voltages. Avoid any direct contact with the human body. Respect eelectrical safety warnings at all times.

• Use certified connectors and cables. All cables must be electrically safe (according to NEN1010) and routed so that there is no direct walking on an/or driving over it nor objects are placed on top of them in any way it might damage the cable. Make sure that the cables and connectors are used stress free.

• Never stand in the immediate vicinity of loudspeakers driven at a high SPL level. Professional loudspeaker systems are capable of causing a sound pressure level that isharmful to human hearing. Seemingly non-critical sound levels (from approx. 95 dB SPL) can cause hearing damage if people are exposed to it over a long period of time.
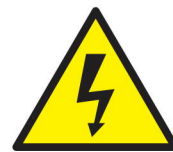
N.B.
Proper operation of Quint Audio equipment is only guaranteed if original Quint Audio accessories and mounting materials are being applied. Quint Audio is not responsible for any equipment and accessories provided by third party manufacturers nor for the consequences of the use of these parts. Quint Audio BV is not liable for any damage to loudspeakers, amplifiers, or any other equipment that is caused by negligence, misuse or improper installation. Quint Audio BV is not liable for any incidental damages resulting from any defect in the new Quint Audio BV product. This includes any damage to another product or products resulting from such a defect.

⚠ IMPORTANT

⚠ WARNING

⚡

⚠ IMPORTANT

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Conditions which require immediate service

In all cases, when after an event risk of unsafe operation of the device, such as:
- After the damaged hitting any casing or cable.
- After a fall from the product resulting in visible or invisble damage.
- After mishaps and/or misuse
- After noticing a change in the operation of the device.
- After the product has been exposed to rain or moisture.
- After the product has been exposed to foreign objects or liquids.

Cooling

- The cooling of the P4 is by natural convection..
-
- Do not block ventilation. Please keep enough space around the equipment.

- To prevent heat from building up in an amplifier rack, make sure cooling air can enter the rack freely.

Product monitoring, care and maintenance

- If applicable please refer to this manual as well as any other manuals pertaining to the system for a detailed description of the inspection procedure.

- Keep electronics away from heat poducing sources such as heaters, stoves, fireworks etc. etc.

- Keep the device away from water; prevent the possibility of water and moisture entering it.

- Even if the product is weather-resistant, it should not be exposed to moisture (rain, sea spray, shower, steam) for a long period of time, nor put in direct contact or immersed in water.

- Prevent objects and/or any liquid to enter the device.

- The processor housing can be cleaned with a damp cloth. Do not use aggressive cleaning agents or solvents as they can damage the protective layers.

- The user should not carry out any work or maintenance on the system other than those mentioned in the manufacturers instructions. Technical service must be carried out by authorised technical personnel only.

⚠ **CAUTION**

⚠ **IMPORTANT**

The Quint Audio P4 is a high end 2-IN/4-OUT digital loudspeaker management system that provides all the processing and control necessary to drive A-series amplifiers for Quint Audio loudspeaker systems. The 2 analog inputs, 4 analog outputs and 1 AES/EBU input are managed by 2 powerful DSP Engines, for 96kHz processing.
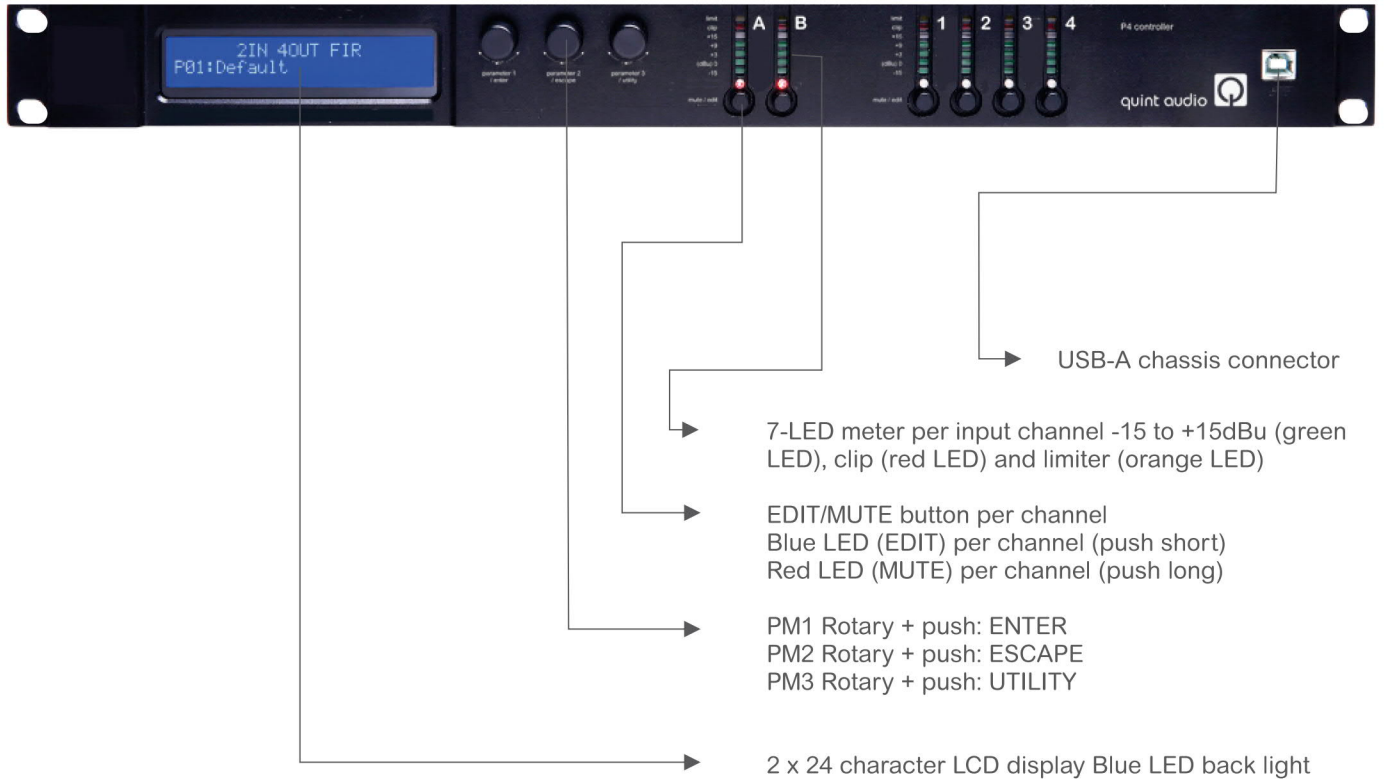
FEATURES:
· Direct PC/Network Connection
· Frontpanel USB connector for direct PC control
· TCP-IP connection for system setup, monitoring and control via fully manageable remote PC software
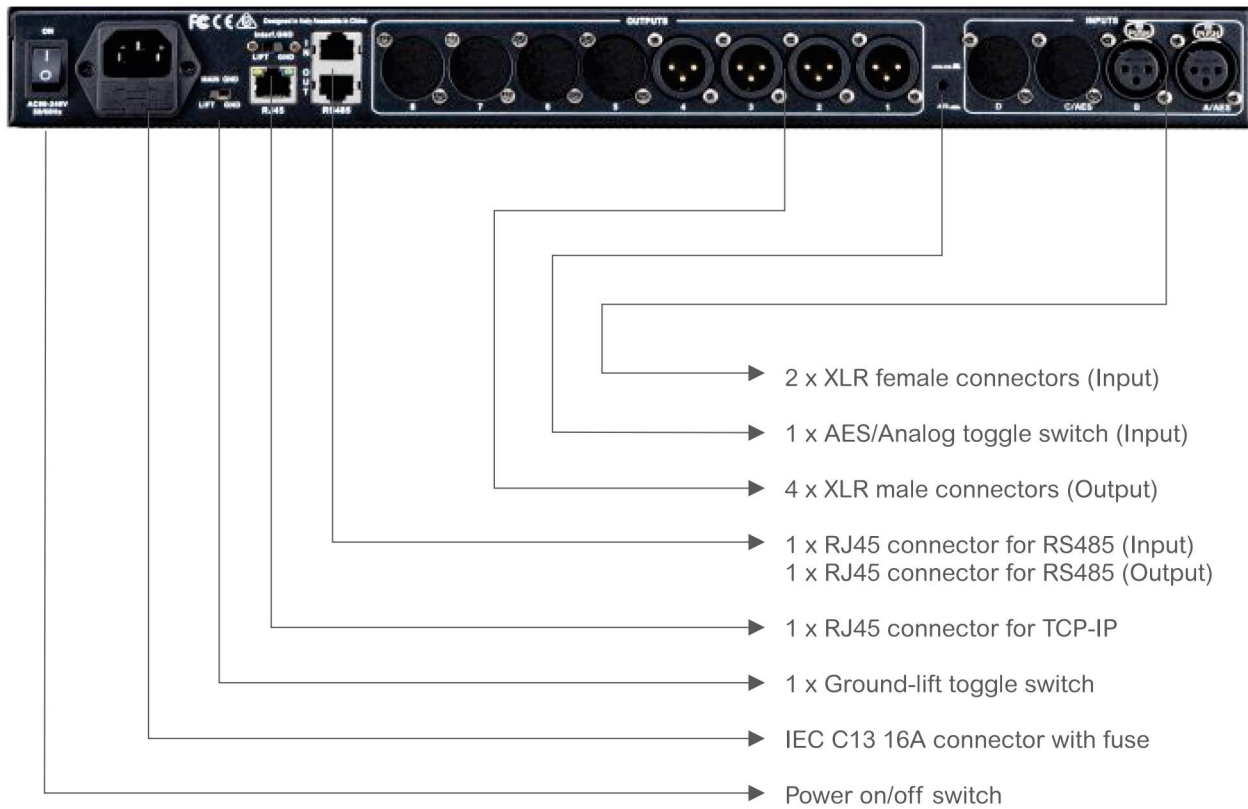· Simultaneous control up to 32 units via PC software

SYSTEM PARAMETERS

Analog input	2 x XLR electronically balanced
Analog output	4 x XLR electronically balanced
Digital input	1 x AES/EBU; Gain 0dBu
Minimum load	150 ohm
THD+N	0.001% at 1kHz 0dBu
S/N	>110dBA
Ground Noise	-92dBu
Device presets	up to 32 User Presets
Front Panel	2 x 24 character LCD display Blue LED back light
	7-LED meter per input channel -15 to +15dBu, clip and limiter mode
	7-LED meter per output channel -15 to +15dBu, clip and limiter mode
	Blue LED (EDIT) per channel
	Red LED (MUTE) per channel
	PM1 Rotary ENTER
	PM2 Rotary ESCAPE
	PM3 Rotary UTILITY
	EDIT/MUTE button per channel
	USB-A chassis connector
Rear Panel	2 x XLR female connectors (Input)
	4 x XLR male connectors (Output)
	1 x RJ45 connector for RS485 (Input)
	1 x RJ45 connector for RS485 (Output)
	1 x RJ45 connector for TCP-IP
	1 x Ground-lift toggle switch
	1 x Analog/Digital toggle switch
Main AC	IEC C13 16A connector / Power on/off switch
	90-240VAC (50/60Hz) - 40W
Dimensions	19"x 1.75"x 9" (483x44x229mm) 1U

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Front panel controls & indicators

USB-A chassis connector

7-LED meter per input channel -15 to +15dBu (green LED), clip (red LED) and limiter (orange LED)

EDIT/MUTE button per channel
Blue LED (EDIT) per channel (push short)
Red LED (MUTE) per channel (push long)

PM1 Rotary + push: ENTER
PM2 Rotary + push: ESCAPE
PM3 Rotary + push: UTILITY

2 x 24 character LCD display Blue LED back light
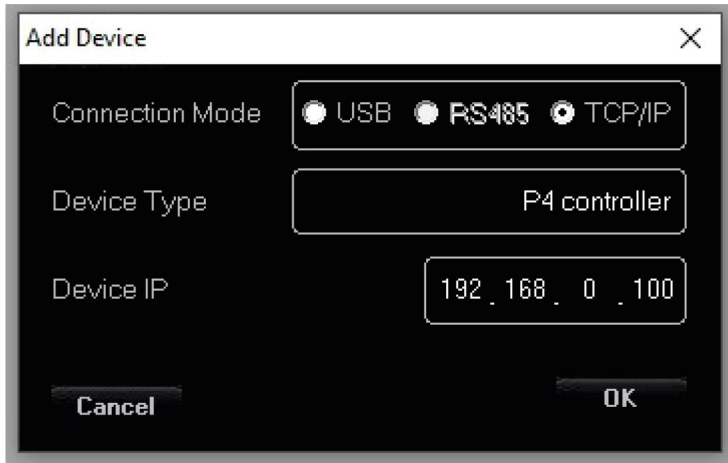
Back panel controls & connectors

2 x XLR female connectors (Input)

1 x AES/Analog toggle switch (Input)

4 x XLR male connectors (Output)

1 x RJ45 connector for RS485 (Input)
1 x RJ45 connector for RS485 (Output)

1 x RJ45 connector for TCP-IP

1 x Ground-lift toggle switch

IEC C13 16A connector with fuse

Power on/off switch

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Quick setup
Before to install the setup.exe, please make sure that the Net Framework 4.0 is already installed on the PC used.

After install the setup.exe and run the app " P4 CONTROLLER" then after the P4 startup window the system show the main window

Below is introduction for the "Device List":

: Connect all device

: Disconnect all device

: Add device to the List

: Remove one or more device from the List

: Search Device

P4 controller : Device Name

Off-line : Connection status of the device, by \
double clicking this characters, user can switch
between "On-line" and "Off-line" mode.

Click the ⬜ icon, you will see below conversation window. Click the preferable connection mode and device model. (In this case, device model shall be "P4 controller")
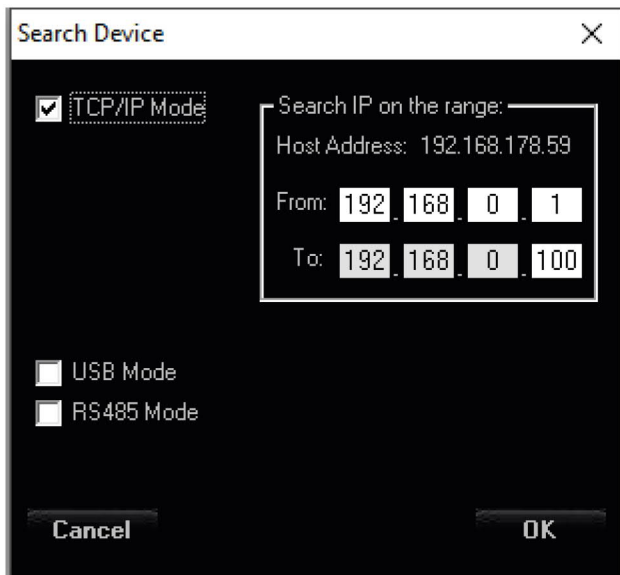
Note: When you connect under TCP/IP mode, please input the IP address of the device; if under RS485 mode, please input the ID of the device as well.

Once you have confirm the information, click "OK" to finish, and you will see the name of device you just added, as below image shows. Double click the device name, you will see the editing page.

You can also add the device into the "Device List" with the 🔍 icon, set configuration in below boxes according to your connection mode, so to Search and connect the device.

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The User has the possibility to connect the device via USB or RS485 or TCP/IP

* If the USB is selected, the User must set the number of the COM used to connect the device
By the way, using the button "Check" the Sw will scan the Pc ports looking for the potentially connected ones: set on the Com Select window the found Com ports until found the working one.

In order to use the USB connection for remotely controlling the P4 CONTROLLER, need first set on the unit the communication interface as USB. To set the USB interface on the P4 CONTROLLER the following steps have to be done:
1.   press the "PM3/UTILITY" button on the front panel, for entering the "UTILITY MENU"
2.   use the "PM1/ENTER" encoder for selecting the "Interface Utility" field
3.   press the "PM1/ENTER" button, for entering the "Interface Setup" field
4.   use the "PM2/ESC" encoder, for selecting the USB interface
5.   after operated the selection, press the "PM2/ESC" button the necessary times for moving back on the several
          fields up to the default screen, showing " P4 CONTROLLER" and the current loaded preset

* If the RS485 is selected, the User must set the number of the COM used to connect the device and the ID number set on the device. When the RS485 is used and the User want connect several devices then if important that all device have an unique ID otherwise some device can not working

Use the button "Check" to see all COM connected on the PC.
In order to use the RS485 connection for remotely controlling the P4 CONTROLLER, need first set on the unit the communication interface as RS485 and assign an ID to the unit.

To set the RS485 interface on the P4 CONTROLLER the following steps have to be done:
1.   press the "PM3/UTILITY" button on the front panel, for entering the "UTILITY MENU"
2.   use the "PM1/ENTER" encoder for selecting the "Interface Utility" field
3.   press the "PM1/ENTER" button, for entering the "Interface Setup" field
4.   use the "PM2/ESC" encoder, for selecting the RS485 interface
5.   use the "PM3/UTILITY" encoder, for selecting the RS485 interface's ID number
6.   after operated the selection, press the "PM2/ESC" button the necessary times for moving back
          on the several fields up to the default screen, showing " P4 CONTROLLER" and the current loaded preset

* If the TCP/IP is selected, the User can click the [icon] icon, and select "TCP/IP Mode" in the checkbox as below image suggests, and input the device IP address range:

In order to use the TCP/IP connection for remotely controlling the P4 CONTROLLER, need first set on the unit the communication interface as TCP/IP and assign an IP address to the unit, if not used DHCP mode. t

To set the TCP/IP interface on the P4 CONTROLLER the following steps have to be done:
1.   press the "PM3/UTILITY" button on the front panel, for entering the "UTILITY MENU"
2.   use the "PM1/ENTER" encoder for selecting the "Interface Utility" field
3.   press the "PM1/ENTER" button, for entering the "Interface Setup" field
4.   use the "PM2/ESC" encoder, for selecting the TCP/IP interface
5.   use the "PM3/UTILITY" encoder, for selecting the DHCP mode On/Off
6.   if set the DHCP mode OFF, press the "PM1/ENTER" button fo entering the field for the IP address assignment
7.   after operated the selection, press the "PM2/ESC" button the necessary times for moving back on the several
          fields up to the default screen, showing " P4 CONTROLLER" and the current loaded preset

Once decided the Interfacing Connection and set the necessary parameters there where required, from the all USB. RS485 and TCP/IP windows, press the button "OK" and the system will start to check the device(s).
When found the connected device(s) the Sw will show a list of the devices found (if no device are found then is possible to continue in demo mode "Off-line") on the window "Device List".

If no devices found, the Sw will ask if the user want to continue in demo mode for evaluating the available process of the P4 CONTROLLER.

EDITING Windows

on the Edit window is possible edit all parameters of the Input and output Output channel, save and load configuration on the sw PC, copy the input channel to another input channel, insert and change a User password in order to lock/unlock the interface, link the channel and see the current version of the firmware and software.

On the ALL Editing Windows, the Top Bar is fixed and shows ever the several available "tools" useful for the User to manage the Editing Job so as to save it on Pc or within the unit.

Load: Load a previously saved Full Configuration from a defined Pc directory. The configuration loaded will be the one edited with its parameters set on the several editing windows. The configuration loaded is containing the ALL parameters set in the several Editing Windows

Save: Save the current Full Configuration (the all parameters set within the all Editing Windows) into a defined Pc directory. The saved configuration is containing the ALL parameters set in the several Editing Windows

Store: Save the current Full Configuration (the all parameters set within the all Editing Windows) into one of 16 available locations within the P4 CONTROLLER. The saved configuration is containing the ALL parameters set in the several Editing Windows and can be recalled also from the unit's front panel.

Recall: Load a previously saved Full Configuration from one of 16 available locations within the P4 CONTROLLER. The configuration loaded will be the one edited with its parameters set on the several editing windows.

Copy (located after Recall): tool for copying the all parameters of one input channel to an other one. The Phase Correction FIR, available on each Input Path, are not included in this copy tool.

Copy (located before Default): tool for copying the all parameters of one output channel to an other one. The Xover FIR, available on each output Path, are included in this copy tool. The Routing available on each couple of outputs (1/2, 3/4) is not included in the copy tool.

Default: tool which can be used to bring back the P4 CONTROLLER to the default setup, which is matching the one got by the Hw reset. All parameters are flatted and the all outputs are in MUTE

User (password selection): by default (when released by the factory) the password for locking permanently the P4 CONTROLLER is set as "000000". Using the USER tool, the user can define is own password of six characters. Just providing at the very beginning the password "000000". a windows is entered allowing the user to assign a new password and confirm it.

Lock: momentary lock of the units' controls. When set, the all parameters cannot be accessed by the user, but no password is required for setting/resetting the lock itself. Used for avoiding to accidentally modify a setting during a live performance or if the user need to leave the editing session momentarily.

Password: this tool is allowing to LOCK the P4 CONTROLLER by Password. When the unit is locked providing a Password, no control is accessible and to exit this status it is necessary to provide again the password allowing so to UNLOCK the unit.

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Link Input or Output: LINK together 2 or more channels. When two or more output channels, with their own particular setting of parameters, are linked, from the link moment ahead the all parameters set to one of the linked channel will be set in the same way also on the other linked channels. The link function is not affecting the status of the parameters of the linked channels, preceding the Link action.

R: button allowing to access the ROUTING Main Editing Page, G: button allowing to access the GAINS Main Editing Page A/B: buttons allowing to access the INPUT CHANNELS Editing Pages, 1/2/3/4: buttons allowing to access the OUTPUT CHANNELS Editing Pages i: info button, giving information about the Firmware and Pc Sw version.

ROUTING Window

This Window is guesting a synoptic image of the several processes available on the Input and Output paths of the P4 CONTROLLER, so as a series of "frames" for the selection of Input sources and Signal Routings.
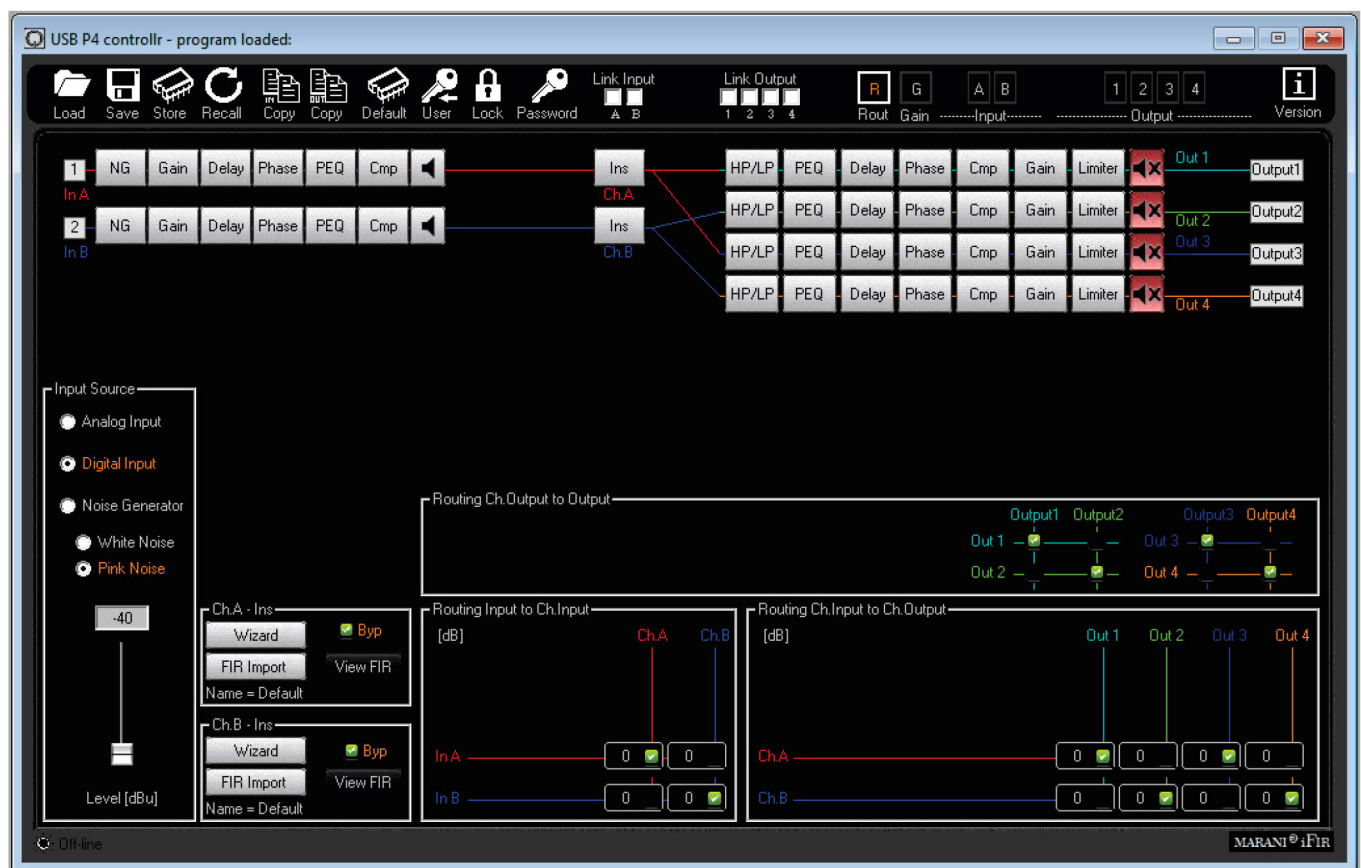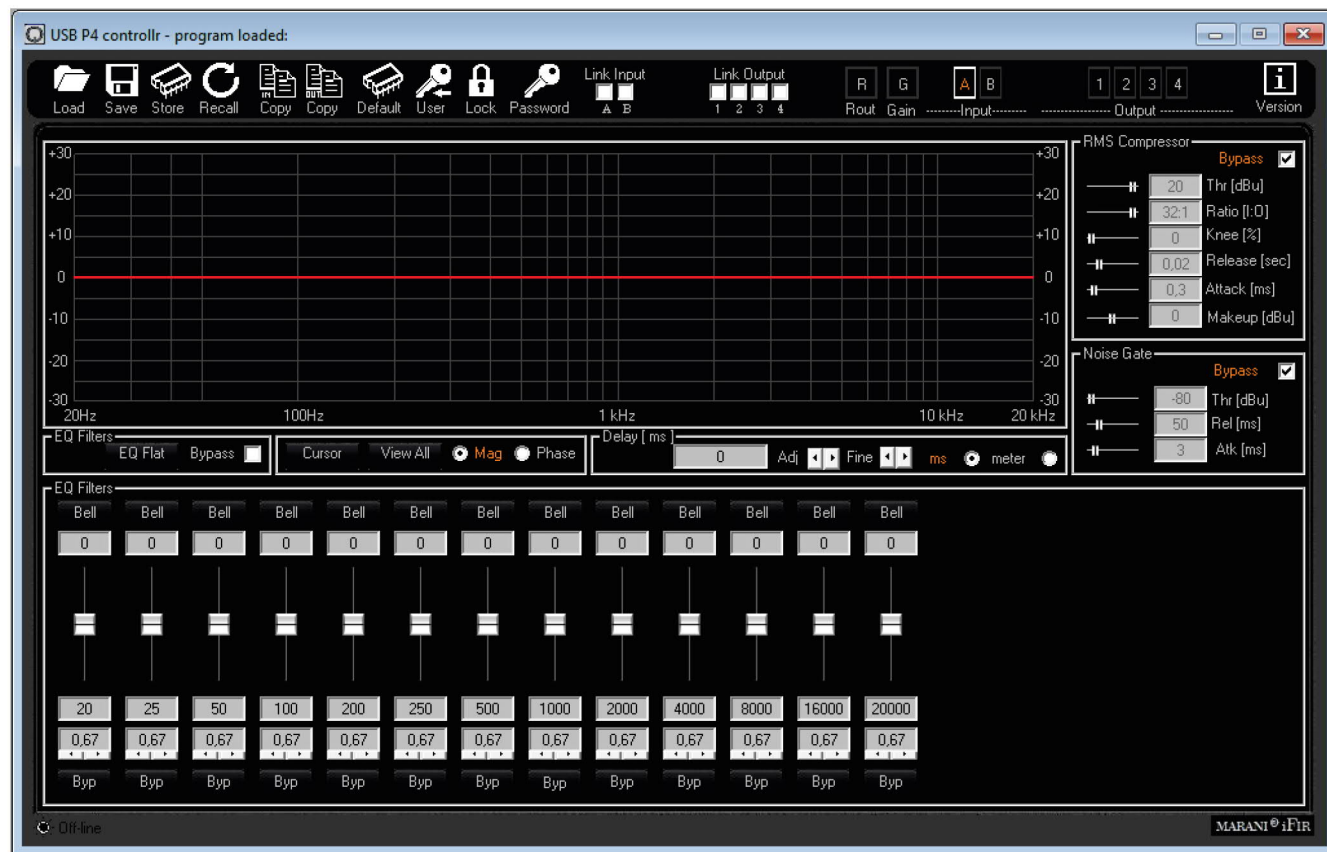
GAIN Window

This "simple" window is allowing a quick control of the Input and Output Gains, so as the Input and Output Mutes. More, a complete "one shot" view of the ALL Input and Outputs Meters is given here.
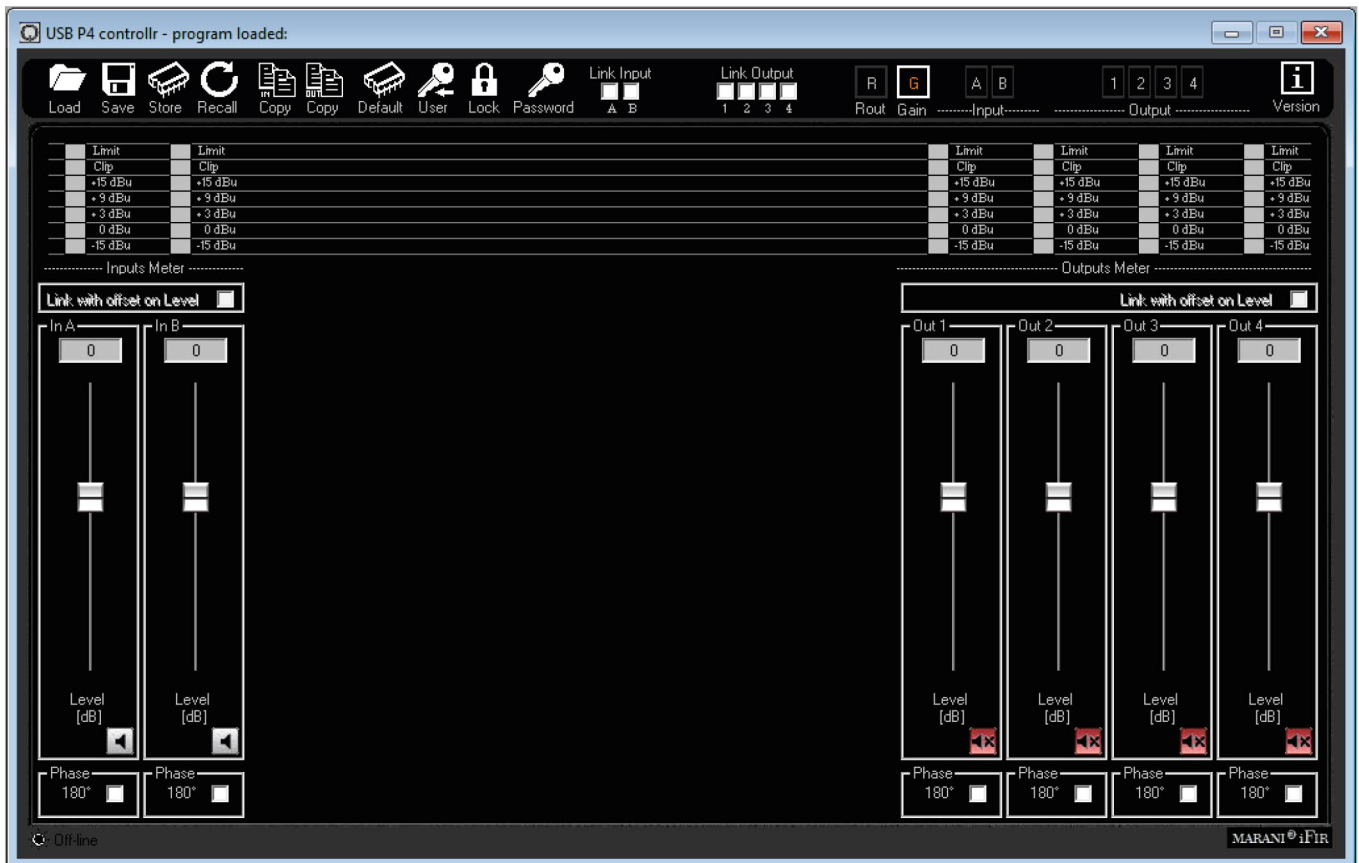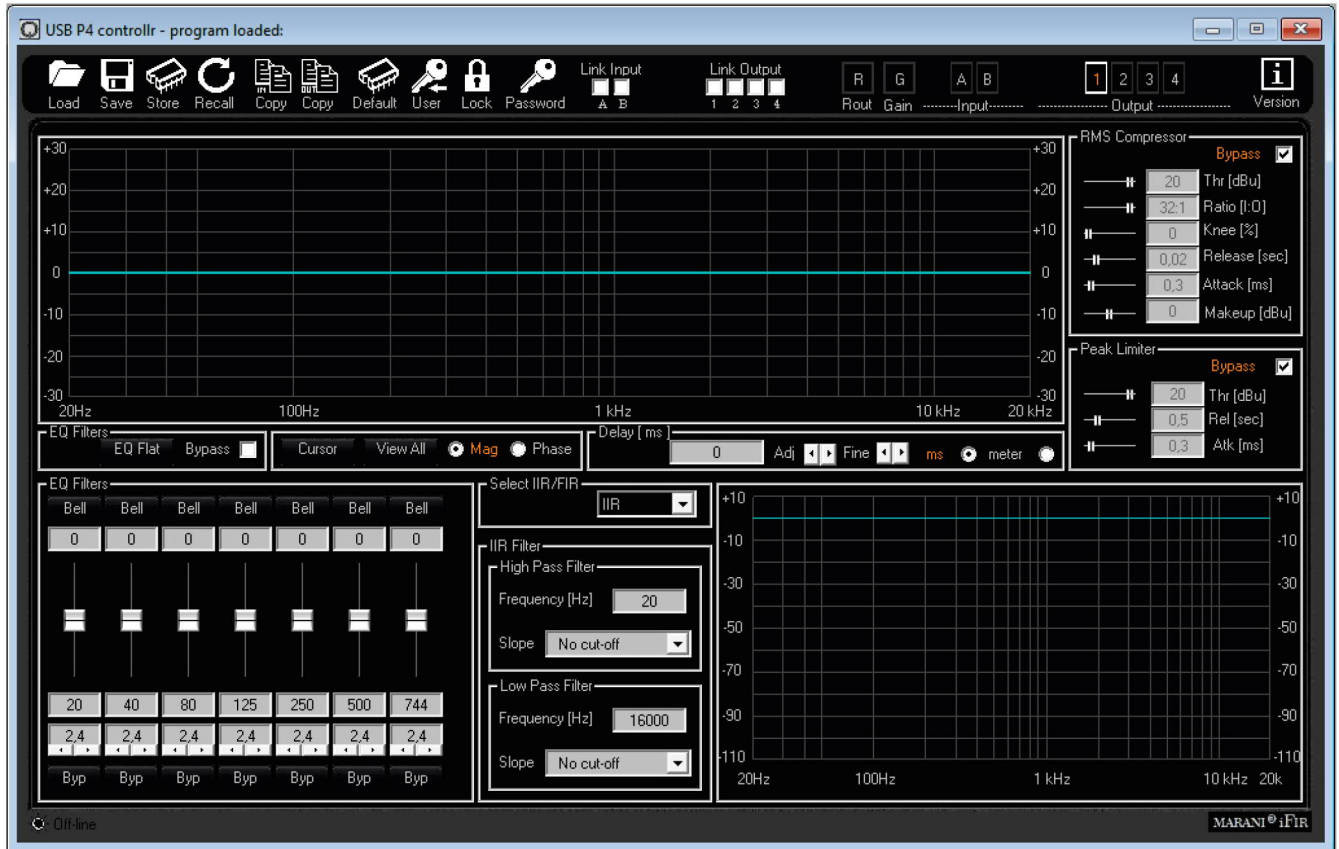
INPUT Window

All the processes available on the Input Paths can be edited within the Input Windows.

OUTPUT Window

All the processes available on the Output Paths can be edited within the Output Windows.

The P4 device can deliver a lot of functionality, more than only indicated in this manual. Even against advanced technicians we strongly advise not to change and/or save any parameter settings when used with quint audio loudspeaker systems. Only use the factory settings instead, as proper operation and loudspeaker protection cannot be guaranteed otherwise.

⚠ **CAUTION**

Disposal
Please dispose of this product according to the respective national regulations or contractual agreements.

EC declaration of conformity

We, Quint Audio BV, Netherlands declare, that the following products;

Quint Audio P4, 4-8 Loudspeaker Management System

To which this declaration relates, is in conformity with :

(1)   The requirements of the Electromagnetic Compatibility Directive (EMC) 2014/30/EU
(2)   The requirements of the Low Voltage Directive (LVD) 2014/35/EU
(3)   The requirements of the Restrictions of Hazardous Substances Directive (RoHS2) 2011/65/EU
(4)   The requirements of Registration, Evaluation and Authorization of Chemicals (REACH) regulation 1907/2006

in accordance with the standards listed below:

(1)   EN 55032:2015
        EN 55032:2017
        EN 62368-1:2014
        EN 62368-A11:2017

According to the provisions of the EMC Directive 89/336/EEC, amended by the directive 91/263/EEG, 92/31/EEG EN 93/68/EEG EN 60065

Established at Amsterdam, Date May 1st, 2019

Warranty
Quint Audio BV warrants the original purchaser and any subsequent owner of each new Quint Audio BV product, for a period of 3 years limited from the date of the original purchase by the original purchaser that the new Quint Audio BV product is free of defects in materials and workmanship.

Quint Audio BV warrants the new product regardless of the reason for failure, except as excluded in this warranty. In order to obtain warranty, you must keep the original sales receipt to establish the exact date of purchase.

Warranty does not cover any product which has been damaged because of any misuse, accident, or negligence. Warranty also does not extend to a new Quint Audio BV product if the serial number has been defaced, altered or removed.

Quint Audio BV will replace defective parts and repair malfunctioning products, regardless of the reason for failure (except as excluded).Warranty work can only be performed at our authorized service centres.

Disclaimer
The information contained in this manual has been carefully checked for accuracy, at the time of going to press, however no guarantee is given with respect to the correctness.

Quint Audio BV bv accepts no responsibility for any errors or inaccuracies that may appear in this manual or the products and software described in it. All specifications in this manual are subject to change without prior notice. Technical specifications, dimensions, weights and properties do not represent guaranteed qualities.

Printed in the Netherlands

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